European Online Journal of Natural and Social Sciences 2019;
Vol.8, No 3 pp. 526-534
ISSN 1805-3602
www.european-science.com

Determinants of Return on Assets

Ali Raza Sattar
FCCA, UAEC, APFA
City University College of Ajman (CUCA), Ajman
Email: alirazasattar@hotmail.com
Tel: +971551582821

Received for publication: 25 March 2019.
Accepted for publication: 16 June 2019

Abstract

The objective of this study is to examine the Determinants of ROA in the cement industry in Pakistan from 2013-2017. The quantile regression is run at different quantiles in Stata 12. The policy makers of cement industry must realize that the capital structure has negative impact on return on assets. The tangibility also has negative impact at 0.80 quantile and 0.90 quantile, so the policy makers must have to look their assets strength in order to gauge the return on assets. Finally the size is highly significant at 0.80 quantile and 0.90 quantile and has been found as positive determinant of return on assets.

Keywords: Return on Assets, determinants, cement industry, Pakistan.

Introduction

The principle reason for the organizations is to boost the investors' return that is the reason organizations pay profits and regularly reinvest their gaining to expand the working resources so as to create an ever increasing number of benefits (Maheshwari, 2016). The nonstop focal points of the organizations are to increment working resources, resigning obligations and to expand productivity so that can be disseminated among the investors (Rafiq, 2011).

The one of the significant choice of the organizations is to choose the level of conveyance of the benefits in light of the fact that the normality in that rate will decide the strategy of the organization and the congruity of that arrangement will choose the pattern of the enthusiasm of the partners in the business (Sia, Ong, Tan, Teo, and Wong, 2016).

The dependability of this strategy is critical for the chiefs and the investors too. Some of the time the organization pay money as profits which is very trying for the directors as this must be occurred with the ramifications of legitimate liquidity position (Awan and Amin, 2014). Truth be told keeping up the better liquidity is likewise the aftereffect of better administration of working capital in the organizations.

Then again the organizations may grant extra offers to the investors and more often than not the method of reasoning behind issuing extra offers isn't constantly comprehended by the investors (Wajid and Shah, 2017). The profit arrangement is the flag of the private data which is obscure to the outcasts and must be uncovered by the directors once the profits are declared by the administrators.

The greater part of the analysts look the profit arrangement as the riddle with little pieces to be keenly fit by the directors and the method of reasoning behind this fitting is all the more regularly obscure to the pariahs. That is the reason the exploration on this point is drastically expanding in the field of writing. There are numerous reasons that exist for paying the profits or not paying profits to the investors.

The writing is as yet quiet and unfit to be immaculate to draw the accurate purpose for presentation of profit strategy. It is still hard to state that there is a solitary objective which flag the course of profit strategy and that is the reason it has turned into a significant issue in the subject of corporate account for discussion.

Scientists have endeavored to establish out the determinants of return on assets (ROA) proportion in various areas on the world, as in Asia, America, Gulf, Africa and have thought of conflicting positive, negative, noteworthy and irrelevant discoveries and kept opened the entryway of research for up and coming specialists.

So under the hypothesis of the firm life cycle one can draw this hypothesis that the organization's age has positive effect on ROA. Under the Pecking Order Theory (POT) to utilize inner wellsprings of financing and afterward the organization may go for outside wellsprings of financing and in reality it is practically difficult to hold up under the organization may maintain a strategic distance from the exchange costs.

This examination is another endeavor to discover the effect of determinants of ROA in Pakistan in Cement Industry. This examination utilizes the board size which is solid measurable apparatus to discover the aftereffects of board information. Board information incorporates the quality of time arrangement and cross-sectional information in the meantime. This investigation will likewise be the expansion to the current writing as the example will incorporate most recent information which is from 2013-2017.

Problem statement

Assurance of ROA is a test (Ahmed Sheik and Wang, 2011). The supervisors are resolved to build ROA of the organizations. They are intended to pay normal benefits and capital increase to the speculators (Ahsan, Wang, and Qureshi, 2016). The chiefs are the executives and trustees of the organizations they work day and night to make the organizations profiatble and their principle objective is to boost the investor riches in genuine world (Awan and Amin, 2014).

The financial specialists search for ordinary pay first and afterward the capital increase a while later. That is the reason the main bearing for the chiefs is to boost the investors riches by keeping up the attractive ROA. The organization needs to know the determinants of ROA (Fama and French, 2012). These frames of mind will bring up an issue and issue that what are the determinants of ROA in the organizations in the Cement business (Noor, Sinaga, and Maulana, 2015).

The persistent conflicting outcomes have left a dark opening in the world of investigating the determinants of ROA that is the reason new scientists are incredibly inspired to uncover more discoveries so as to come to definitive discoveries (Fama E. F., 1980). Numerous specialists contend that in the field of corporate account the determinants of profitability are one of the issues which have dependably been discussion capable.

The chiefs are required to find the best way to demonstrate the true mentality towards investors is to pay them better profits and that must be conceivable if the organization is procuring better profits (Baum, Schaffer, and Stillman, 2003) and yet the organization can possibly procure better benefits in the event that they include obligation in the capital blend and that will build the exchange cost and can expand the premium cost which will prompt decline in acquiring after interests. Under this setting the organization may not expand its productivity and may not build its ROA.

Most analysts have experienced numerous conceivable determinants however the conflicting incorporations of significant and affecting factors have left the room still void for the experimental examinations. There is a need of exact examination in Pakistan recorded bond organizations which will tackle the puzzle of irregularities in results. There are a few examinations accessible in this area

yet the investigations are not refreshed till 2017. So this examination will be a commitment to the current writing by giving the refreshed data of determinants and their effect on ROA in this locale.

General objective

The general objective of this study is to examine the Determinants of ROA in the cement industry in Pakistan from 2013-2017.

Specific objectives

1. To test the hypotheses of the theories such as Pecking Order Theory and Agency Theory in the cement industry of Pakistan.
2. Further to analyze the impact of independent variables such as size of the firm, board size, tangibility of the business, liquidity, firm's age and Financial Leverage.

Research questions

The research questions raised from this research are:

1. Does debt to equity ratio have significant effect on ROA?
2. Does the board size of the firm have significant effect on ROA?
3. Does the tangibility of the firm have significant effect on ROA?
4. Does firm age have significant effect on ROA?
5. Does the size of the firm have significant effect on ROA?
6. Does the liquidity of the firm have significant effect on ROA?

Hypotheses

The following hypotheses can be drawn:

1. The debt to equity ratio has significant negative impact on ROA.
2. The board size of the firm has significant positive impact on ROA.
3. The tangibility of the firm has significant positive impact on ROA.
4. The firm age have significant positive impact on ROA.
5. The size of the firm has significant positive impact on ROA.
6. The liquidity of the firm has significant positive impact on ROA.

Significance of study

This examination will characterize the effect of the determinants of ROA. This examination will likewise be the expansion to the current writing as the example will incorporate most recent information which is from 2013-2017.

This investigation will be useful for the researchers and policy makers in this area to examine the effect of determinants of ROA. The partners will discover comfort in the wake of examining this examination as they can without much of a stretch come to realize which organizations will pay better profits.

Literature review

Analysts dependably endeavor to unravel this riddle and continue doing research in finding the effect of certain variables on ROA (Rafiq, 2011). The analysts when find noteworthy effect of those elements on ROA then they can guarantee those elements as the determinants of profit policy (Noor, Sinaga, and Maulana, 2015).The pecking order theory proposes that the organization which encounters higher development rate will at last experience high ventures and that will result in ROA (Fama and French, 2012).

Then again numerous analyst have discovered that the exchange cost has negative effect on profit arrangement, the exchange cost happens in light of presentation of obligation financing in the capital structure of the organizations (Awan and Amin, 2014). The obligations financing builds the benefit and yet expands the danger of indebtedness and liquidation (Fama and French, 2012). Be

that as it may, then again some discovered positive effect of exchange cost on profit approach (Maheshwari, 2016).

The above conflicting outcomes are the primary worries for the partners and scientists. The approach creators must comprehend the effect of components on ROA especially for the situation when those elements have noteworthy effects. It isn't vital that the elements having huge effect on profit approach in a locale may have a similar effect on profit arrangement on other rgion.

Many have discovered that the signifcant positive effect of tangibility on ROA and furthermore bolster the office hypothesis then again the inquiry emerges when analyst discover negative relationship and go againts the office hypothesis. Then again a similar case goes for tanigility of the organizations.

The organization hypothesis underpins the positive effect of substance on ROA however resaercher likewise come to realize that substantial quality has unimportant effect on ROA (Noor, Sinaga, and Maulana, 2015).

The analysts estimates the free money streams by taking the working money streams separated by all out resources and then again the substantial quality is controlled by taking common logarithm of tangiblt non current resources of the companies (Awan and Amin, 2014).

Scientists contend that the ROA is the flag of private data which in under the table and just administration knows, where as the partners are unconscious of this reality. At the point when the administration reports the profit to the investors then this gives the flag to the partners about the better returns of the companies (Abbas, 2016).

This ROA is the aftereffect of covering and dealing with the business hazard. Hence the scientist have discovered the negative connection among ROA and business hazard, some have discovered positive noteworthy relationship and some find irrelevant. So here the inquiry emerges that what sway does the business hazard will have in GCC on ROA.

Hazard is straightforwardly identified with returns so it is intriguing to discover the effect of business chance on ROA. Then again the firm life cycle hypothesis is significant that says

that the organizations with more prominent age will can possibly pay better profits and then again the organizations which are relatively more youthful will pay lower profits to shareholders(Noor, Sinaga, and Maulana, 2015). So under the hypothesis of the firm life cycle one can draw this speculation that the organization's age has positive effect on ROA.

Theoretical Framework

Determinants of ROA

Pecking order theory

The company uses internal sources of financing and may go for external sources of financing. The Pecking Order Theory (POT) states that hierarchy fundings coming from internal fund and then followed by external fund (Noor, Sinaga, & Maulana, 2015). Internal financing is preferred on external financing and Short-term financing is more preferred on long-term financing (Fama & French, 2012).

This is done so that the company may avoid the transaction costs. This theory suggests that the company which experiences higher growth rate will ultimately experience high investments and that will result in higher ROA. So under this theory it can be hypothesized that there is a positive relationship between ROA and tangibility.

Transaction cost theory

This theory argues that the transaction cost is the basis for lower dividend payout, as the company utilizes the major portion of the internally generated profits to pay the debt cost. So here it

can also be hypothesized that the dividend payout ratio has negative impact on financial leverage and most of the time the financial leverage is measured by debt ot equity ratio.

Agency theory

The agency cost arises when the directors do not own the firm completely. The Static trade-off theory and Peckiing order theory are based on stewardship theory. Which means that these theories work when the there is no conflict of interests between managers and the shareholders. The payment of dividend to the shareholders will ultimately reduce the availability of free cash flows with the managers and that is in the favor of agency theory as shareholders will have confidence in the managers.

On the other hand the availability of tangible fixed assets will ensure the power of the availability of resources for the companies. The companies with huge tangible assets are asumed to have sound financial position and have ability to pay the debtholders and shareholders as well. So under this context one can argue that the tangibility will have a positive impact on dividend payout ratio.

Dynamic trade of theory

The larger firms with large income enjoys the benfits of tax shield and prefer to go for debt financing, this argument supports Dynamic trade-off theory (Abbas, 2016). The bankruptcy cost and agency cost should also be attached to the cost of debt.

Other variables

There are some other variables which are to be controlled for the better analysis of determinants of dividend payout ratio. These variables include size of the firm, liquidity position and profitability.

Liquidity position

The companies with better liquidity are supposed to pay better dividends. The company with better liquidity normally does not face the problem of overtrading and similarly it does not face the problem of under capitalization. They invest the excess cash in the right options and can manage better source of financing if it face the problem of short of cash. So under this context one can also draw this hypothesis that the company's liquidity has positive impact on dividend payout ratio. Because the companies with better liquidity position do not face liquidity problems and can pay dividends to the shareholders.

Figure 1 Theoretical framework

Methodology

This study is done on cement industry in Pakistan. There are 12 companies in the sample and the data has been taken from the published audited financial statements of the companies. The Stata 12 is used to run the quantile regression at different quantiles to observe the significance of the determinants of ROA.

$$roa_{it} = \beta_0 + \beta_1 cs_{it} + \beta_2 bs_{it} + \beta_3 tang_{it} + \beta_4 fage_{it} + \beta_5 size_{it} + \beta_6 liq_{it} + \mu_{it}$$

In the above equation roa is the dependent variable which measures the return on assets (net profit/total assets). The independent variables include cs as capital structure measured by debt to equity ratio, bs as board size measured as the number of directors on the board, tang as the tangibility measured by the natural logarithm of total assets, fage is the firm age, size is the size of the business measured as natural logarithm of total sales and finally liq measures the liquidity based on current ratio (current assets/current liabilities). The β_0 is the constant in equation, the symbols β_1-β_6 is the coefficients of the independent variables and finally μ is the error term. The "i" represents the number of companies in the sample and "t" represents the period of years.

Results

Table 1. Descriptives

Summary Statistics				
Variable	**Mean**	**Standard Deviation**	**Minimum value**	**Maximum value**
Dependent variable				
roa	12.434	6.107	-1	23.6
Independent variable				
Cs	0.94	1.277	0.1	8.7
Bs	8	1.01	7	10
Tang	16.082	2.38	9.3	18.4
Fage	29	12.19	4	57
Size	19.45	2.88	11.22	22.25
Liq	1.69	1.19	0.2	4.5

This study includes 50 observations including 10 companies from cement industry in Pakistan over the period of 5 years. There are 10 companies which are unit of analysis in this study. These companies are as below:

Table 2. Companies in cement industry included in the sample

Symbol	Name of the company
ACPL	Attock Cement Pak Ltd.
JVDC	Javedan Corp.
BWCL	Bestway Cement Limited.
DCL	Dewan Cement
LUCK	Lucky Cement Limited.
MLCF	Maple Leaf Cement Ltd.
PIOC	Pioneer Cement Ltd.
POWER	Power Cement Limited
FCCL	Fauji Cement Co. Ltd.
FECTC	Fecto Cement Ltd.

The dependent variable is roa which has mean value 12.43% with the standard deviation of 6.107% as shown in Table 1. The minimum value of roa is -1% which shows that these companies

do not have return on assets less than the -1%. On the other hand the return on investment in these companies is not more than 23.6%. The mean value of cs in the data is 0.94 with standard deviation of 1.277. The board size in these companies has average rate of 8 directors with standard deviation of 1.0.

The average tangibility is 16.08 with standard deviation of 2.38. The mean value of fage is 29 years with standard deviation of 12.19 years. The firm size shows mean value 19.45. The mean value of liq also has mean value 1.69.

Table 3. Quantile regression results

Quantile regression model					
Variable	**0.50 Quantile regression**	**0.60 Quantile regression**	**0.70 Quantile regression**	**0.80 Quantile regression**	**0.90 Quantile regression**
Dependent variable: roa					
Independent variable					
Cs	-0.60	-1.24***	-1.49***	-1.57***	-1.51**
Bs	2.35	0.797	-0.41	-0.15	-0.44
Tang	6.77	-27.14	-29.98	-57.55**	-57.64*
Fage	0.135	-0.038	-0.11	-0.12	-0.087
Size	-6.46	21.94	24.46	47.22**	47.32*
Liq	2.64*	1.13	0.51	0.268	-0.012
constant	1.57	18.47	29.85**	30.03**	31.86**
Note	***	**	*		
Significance level	**1 percent**	**5 percent**	**10 percent**		

In table 3 the 0.50 quantile regression shows that only liq is a significant positive determinant of roa and the coefficient is significant at 10 percent level of significance. The other determinants are insignificant at even 10 percent level of significance.

The 0.60 quantile regression shows that capital structure is negative significant determinant of roa the value of the coefficient is -1.24 and this value is significant at 1 percent level of significance. The other determinants are insignificant at even 10 percent level of significance.

Similar to the 0.60 quantile regression, the 0.70 quantile regression shows that capital structure is negative significant determinant of roa the value of the coefficient is -1.49 and this value is significant at 1 percent level of significance. The other determinants are insignificant at even 10 percent level of significance. But here the constant is also significant at 5percent level of significance.

At 0.80 quantile regression the cs is significant at 1 percent the coefficient is -1.57 but it is a negative determinant, the tangibility is also negative determinant of roa the value is -57.55 the size is significant at 5 percent the coefficient of size is 47.22 and this is positive. Here the constant is also significant at 5percent level of significance.

At 0.90 quantile regression the cs is significant at 5 percent the coefficient is -1.51 but it is a negative determinant, the tangibility is also negative determinant of roa the value is -57.64 the size is significant at 5 percent the coefficient of size is 47.32 and this is positive. Here the constant is also significant at 5 percent level of significance.

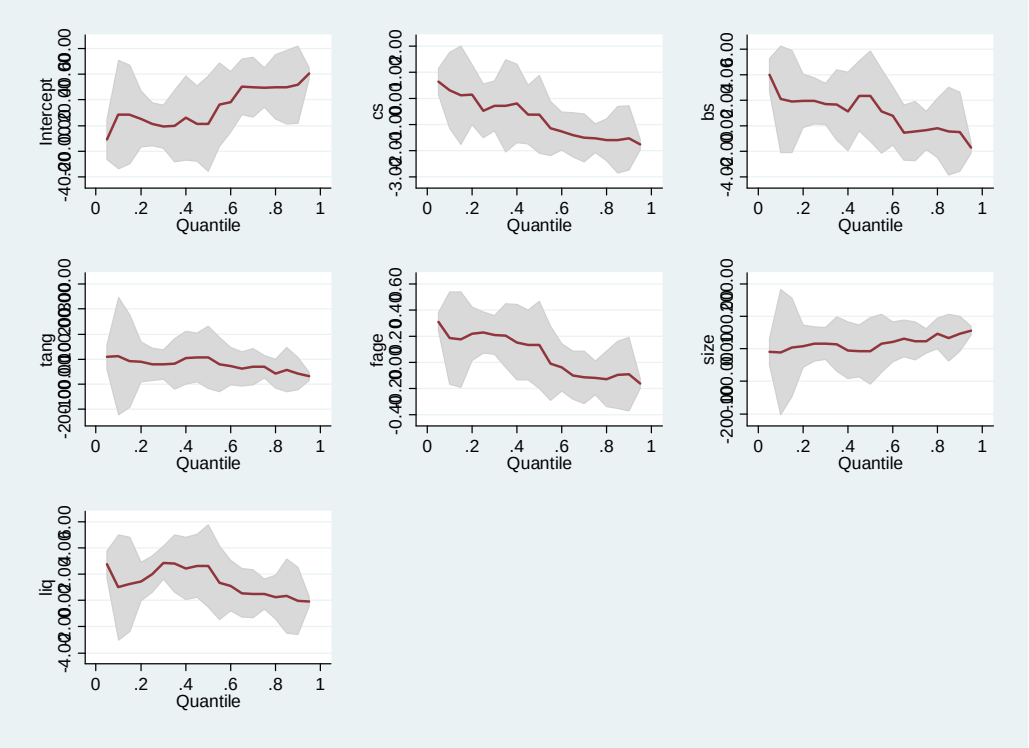

Figure 2. Quantile regression with graphical representation

Table 4. Results of the hypotheses

Quantile regression model					
Variable	**0.50 Quantile regression**	**0.60 Quantile regression**	**0.70 Quantile regression**	**0.80 Quantile regression**	**0.90 Quantile regression**
Dependent variable : roa					
Independent variable					
Cs	H_1 is rejected insignificantly	H_1 is rejected significantly	H_1 is rejected significantly	H_1 is rejected significantly	H_1 is rejected significantly
Bs	H_2 is rejected insignificantly	H_2 is accepted insignificantly	H_2 is rejected insignificantly	H_2 is rejected insignificantly	H_2 is rejected insignificantly
Tang	H_3 is rejected insignificantly	H_3 is rejected insignificantly	H_3 is rejected insignificantly	H_3 is rejected significantly	H_3 is rejected significantly
Fage	H_4 is rejected insignificantly	H_4 is rejected insignificantly	H_4 is rejected insignificantly	H_4 is rejected insignificantly	H_4 is rejected insignificantly
Size	H_5 is rejected insignificantly	H_5 is accepted insignificantly	H_5 is accepted insignificantly	H_5 is accepted significantly	H_5 is accepted significantly
Liq	H_6 is accepted significantly	H_6 is accepted insignificantly	H_6 is accepted insignificantly	H_6 is accepted insignificantly	H_6 is accepted insignificantly

Conclusion and recommendation

The policy makers of cement industry must realize that the capital structure has negative impact on return on assets so if the companies want to increase the return on assets then they have to

decrease the debt portion in their capital mix as the findings related to capital structure is significant at every quantile.

The tangibility also has negative impact at 0.80 quantile and 0.90 quantile, so the policy makers must have to look their assets strength in order to gauge the return on assets. Finally the size is highly significant at 0.80 quantile and 0.90 quantile and has been found as positive determinant of return on assets. So the companies have to increase their sales in order to generate high return on assets.

References

Abbas, M. (2016). Determinants of Capital Structure: Empirical evidence from listed firms in Norway. *(Master's thesis, Oslo and Akershus University College of Applied Sciences)*.

Ahmed Sheikh, N., & Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance*, 37(2), 117-133.

Ahsan, T., Wang, M., & Qureshi, M. A. (2016). Firm, industry, and country level determinants of capital structure: evidence from Pakistan. *South Asian Journal of Global Business Research*, 5(3), 362-384.

Awan, A., & Amin, M. S. (2014). Determinants of capital structure. *European Journal of Accounting Auditing and Finance Research*, 2(9), 22-41.

Baum, C. F., Schaffer, M. E., & Stillman, S. (2003). Instrumental variables and GMM: Estimation and testing. *Stata journal*, 3(1), 1-31.

Fama, E. F. (1980). Agency Problems and the Theory of the Firm. *Journal of political economy, 88*(2), 288-307.

Fama, E. F., & French, K. R. (2012). Size value and momentum in international stock returns. *Journal of financial economics, 105*(3), 457-472.

Horne, J. C., & John M. Wachowicz, J. (2008). *Fundamentals of Financial Management.* Pearson.

Maheshwari, M. B. (2016). Determinants of capital structure (Doctoral dissertation).

Noor, T., Sinaga, B., & Maulana, T. N. (2015). Testing on Pecking Order Theory and Analysis of Company's Characteristic Effects on Emitten's Capital Structure. *Indonesian Journal of Business and Entrepreneurship (IJBE)*, 1(2), 81-89.

Rafiq, M. (2011). The determinants of capital structure of the chemical industry in Pakistan.

Sia, L. L., Ong, G. W., Tan, E. K., Teo, Y. L., & Wong, A. Y. (2016). *The Determinants of Capital Structure of Government Linked Companies in Malaysia.* Malaysia: (Doctoral dissertation, UTAR).

Wajid, H., & Shah, S. A. (2017). The Influence of Corporate Governance and Ownership Structure on Capital Structure of Pakistani Listed Companies. *Journal of Contemporary Management Sciences*, 1(2), 31-46.